UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Offic
Addr ss: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

KM

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/218,277	12/22/98	EISENBACH-SCHWARTZ M	EISHENBACH=3

001444 HM12/1205
BROWDY AND NEIMARK, P.L.L.C.
624 NINTH STREET, NW
SUITE 300
WASHINGTON DC 20001-5303

EXAMINER	
TURNER,S	
ART UNIT	**PAPER NUMBER**
1647	15

DATE MAILED: 12/05/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.	Applicant(s)
09/218,277	Elsenbach-Schwartz
Examiner	**Group Art Unit**
Sharon L. Turner, Ph.D.	1647

☒ Responsive to communication(s) filed on *9-14-00*

☐ This action is **FINAL.**

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire *3* month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claim

☒ Claim(s) *3-7, 9-13, and 16-19* is/are pending in the applicat

Of the above, claim(s) *16, 9-13 and 17-19 as specified herein* is/are withdrawn from consideration

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) *3-7, 13, 16, and 19* is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☒ None of the CERTIFIED copies of the priority documents have been

☒ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). *7,8*

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

DETAILED ACTION

1. The preliminary amendment filed 9-14-00 has been entered into the record and has been fully considered.

2. Claims 1-2 are canceled. Claims 3-7, 9-13 and 16-19 are pending.

Election/Restriction

3. Applicant's election with traverse of Group I, methods of preventing or inhibiting axonal degeneration, species methods of treatment of delivering antigen, NS-antigen myelin basic protein, injury via blunt trauma and disease glaucoma in Paper No. 15 is acknowledged. The traversal is on the ground(s) that the groups should not have been restricted as they have identical steps and agents. Applicants have chosen to amend the claims such that groups I and II are recited in a single claim. This is not found persuasive because the claims are separable in that they achieve different effects as claimed, may be differently classified and require different searches.

The requirement is still deemed proper and is therefore made FINAL.

4. Claim 16 to the extent of promoting nerve regeneration and to the extent of (a), (c), (d), (e) and (f), claims 9-13, and 17-19 to the extent of the nonelected species are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Myelin basic protein antigen is SEQ ID NO:12. Applicant timely traversed the restriction (election) requirement in Paper No. 15. Applicant is required to set forth the claims in accordance with the elected invention.

Claim Objections

5. Claims 3-5 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claims 3-5 recite the method of claim 16 wherein the method is for ameliorating effects of different diseases and injuries, however the recitation of different diseases and injuries fail to further limit the method or effects as claimed and thus do not further limit the parent claim. The examiner notes that the claim structure is akin to a method of use claim as the injuries and diseases do not further distinguished the method and thus such limitations are not deemed to receive patentable weight.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claims 16, 3-7, 13 and 19 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. This is a written description rejection.

The elected invention comprises administration of NS-antigen and specifically myelin basic protein antigen. The specification discloses example 8 and 9 which are directed to

administration of NS-specific antigen, namely myelin oligodendrocyte glycoprotein and myelin basic protein. Myelin basic protein is the elected species of NS-specific antigen. Examples 8 and 9 disclose that the number of retinal ganglion cells (as measured by dye labeling) following crush injury of optic nerve was greater than the number of retinal ganglion cells in animals having not received administration of NS-specific antigen. The claims are directed to effects of injury including blunt trauma, penetrating trauma, hemorrhagic stroke, ischemic stroke and damage by surgery, effect of diseases including diabetic neuropathy, senile dementia, Alzheimer's disease, Parkinson's disease, facial nerve palsy, glaucoma, Huntington's chorea, amyotrophic lateral sclerosis, non-arteritic optic neuropathy vitamin deficiency and effects of a disease which are not an autoimmune disease. Yet, the specification fails to delineate the effects which are considered to be encompassed and excluded from the claims as a result of administration of NS-specific antigen. The specification also fails to teach the effects associated with the relevant diseases and injuries and fails to disclose the effects associated with NS-specific antigen administration in the relevant injury and disease models. Therefore effects other than retinal ganglion cell survival fail to meet the written description provision of 35 USC 112, first paragraph.

Vas-Cath Inc. v. Mahurkar, 19 USPQ2d 1111, makes clear that, "applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention. The invention is for purposes of the 'written description' inquiry, whatever is now claimed." (See Vas-Cath at page 1116.)

With the exception of retinal ganglion cell survival, the skilled artisan cannot envision the effects encompassed by the claims with respect to the recited injuries and diseases and thus conception is not achieved until reduction to practice has occurred, regardless of the complexity or simplicity of the method of isolation. Adequate written description requires more than a mere statement that it is part of the invention. The specific effects are required. Thus, the specification lacks written description support for the broad class of effects as claimed.

Therefore, only retinal ganglion cell survival, but not the full breadth of claims meet the written description provision of 35 USC 112, first paragraph. Applicant is reminded that Vas-Cath makes clear that the written description provision of 35 USC 112 is severable from its enablement provision. (See page 1115.)

8. Claims 16, 3-7, 13 and 19 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for increased retinal ganglion cell survival following optic nerve crush by administration of NS-specific antigens MOG and MBP, does not reasonably provide enablement for ameliorating the effects of a disease or injury as claimed. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims.

The specifications disclosure is insufficient to enable one skilled in the art to practice the invention as broadly claimed without undue experimentation. The factors relevant to this discussion include the quantity of experimentation necessary, the lack of working examples, the unpredictability of the art, the lack of sufficient guidance in the specification and the breadth of

the claims. The claims encompass effects of injury including blunt trauma, penetrating trauma, hemorrhagic stroke, ischemic stroke and damage by surgery, effect of diseases including diabetic neuropathy, senile dementia, Alzheimer's disease, Parkinson's disease, facial nerve palsy, glaucoma, Huntington's chorea, amyotrophic lateral sclerosis, non-arteritic optic neuropathy vitamin deficiency and effects of a disease which are not an autoimmune disease. Such effects include for example depletion of dopamine, deposition of beta-amyloid, neurodegeneration of motor neurons, peripheral neuropathy and oxidative stress. However, the specification fails to exemplify alleviation of such effect by administration of NS-specific antigen and the skilled artisan is provided with no basis to expect that such administration of myelin basic protein or other NS-specific protein would ameliorate the laundry list of encompassed effects associated with the recited injuries and diseases. Because the diseases differ in etiologies and treatments the specification does not provide evidence commensurate in scope with the claims. For a description of various effects of the claimed diseases and injuries, see in particular Faden et al., IDS Reference AK, Yoshino et al., IDS Reference AM, and Kandel et al., Ed., Principles of neural science, 977-982. In addition, Jackowski highlights that neuronal cells exhibit different propensities for degeneration and survival. Thus, the skilled artisan would not expect similar effects of any given treatment in different model systems, in particular to neuronal cells of the peripheral and central nervous system.

As the claims are directed to NS-specific antigen derivatives and epitopes, the skilled artisan recognizes the unpredictability in the art associated with the prediction of peptide function

based upon divergent structure, including derivatives and epitopes, see in particular Skolnick et al., Trends in Biotech., 18(1):34-39, 2000, abstract and Box 2 and Choh., PNAS 77(6):3211-14, 1980. Thus, for those divergent peptide structures, the skilled artisan would be required to perform further undue experimentation to discover those peptides which possess the properties of alleviating effects associated with any injury and disease recited.

Further, with regard to applicants limitation "an effective amount" as it pertains to the recited injuries and diseases, the specification and claims fail to provide any guidance as to that amount which is required to ameliorate any effects which are not specified in relation to the recited diseases and injuries. Thus, for these reasons the skilled artisan would require further undue experimentation to make and use the invention as claimed.

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. Claims 16, 3-7, 13 and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "effective amount" in claim 16 is a relative term which renders the claim indefinite. The term "effective amount" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. There is no stated function or effect to be achieved.

The metes and bounds of "effects" to be ameliorated are indefinite because no effects are specified result has been identified by the claim.

Priority

11. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Israel on 5-19-98. It is noted, however, that applicant has not filed a certified copy of the application as required by 35 U.S.C. 119(b). Therefore the earliest priority date awarded instant claims is that of PCT/US98/14715 filed 7-21-98. Art is applied accordingly.

Claim Rejections - 35 USC § 102 or 103

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371© of this title before the invention thereof by the applicant for patent.

13. Claims 16, 3-7, and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Ling et al., WO96/16086, 30 May 1996.

Ling et al., teach example 2 and 9-11 comprising administration of MBP(87-99) a myelin basic protein derivative and epitope to animals suffering from EAE, a model which mimics multiple sclerosis. The administration inherently provides an effective amount as provided in

example 2, .1 ml of equal volume of MBP peptide or analogue dissolved in PBS and emulsified in Freund's adjuvant supplemented with 4 mg/ml heat-killed Mycobacterium tuberculosis, H37RA. Co-immunization of the peptide analogue (91K>A) specifically inhibited the induction of EAE a form of neuronal degeneration by MBP 87-99 but did not inhibit induction of EAE by MBP(68-88). Neuronal degeneration was measured by clinical score. Thus, the reference teachings anticipate the claimed invention.

14. Claims 16, 3-7, 13 and 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Weiner et al., US Patent No. 5,858,364 filed May 31, 1995 and issued Jan. 12, 1999..

Weiner et al., teach administration of NS-specific antigen myelin basic protein (MBP) an epitope to animals, see in particular Examples 1-5, and MBP epitopes or derivatives, see in particular Example 16. The administrations are effective to ameliorate disease and injury brought about by neuronal degeneration as measured by histologic examination clinical score. The effective amount of MBP differs variably based upon route of administration but include for example oral administration of 500 ug MBP, see in particular, column 12, line 18 and immunization by injection with 50 ug MBP, see in particular, column 12, line 6. Immunogenic epitopes were specifically tested in example 16. Thus, the reference teachings anticipate the claimed invention.

Status of Claims

15. No claims are allowed.

16. Any inquiry of a general nature or relating to the status of this general application should be directed to the Group receptionist whose telephone number is (703) 308-0196.

Papers relating to this application may be submitted to Technology Center 1600, Group 1640 by facsimile transmission. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). Should applicant wish to FAX a response, the current FAX number for Group 1600 is (703) 308-4242.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sharon L. Turner, Ph.D. whose telephone number is (703) 308-0056. The examiner can normally be reached on Monday-Thursday from 8:00 AM to 6:30 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Kunz, can be reached at (703) 308-4623.

Sharon L. Turner, Ph.D.
December 4, 2000

CHRISTINE J. SAOUD
PRIMARY EXAMINER
Christine J. Saoud